

	Dec. 9	Dec. 10	Dec. 11	Dec. 12	Dec. 13
9:00~9:50	Chair: Zhaojun Bai	Chair: Weichung Wang	Chair: Zhong-Zhi Bai	Chair: I-Liang Chern	City Tour in Taipei
	James Demmel	Jack Dongarra	Iain Duff	Raymond Chan	
9:50~10:10	Tea Break				
10:10~10:50	Chair: Ren-cang Li	Chair: Chin-Tien Wu	Chair: Bo Yu	Chair: Raymond Chan	
	Bo Kagstrom	Xiao-Chuan Cai	Zhong-Zhi Bai	Mila Nikolova	
10:50~11:30	Yangfeng Su	Sherry Xiaoye Li	Ken Hayami	Delin Chu	
11:30~12:10	Jungong Xue	Jose Roman	Xiao-Qing Jin	Luca F. Pavarino	
12:10~13:20	Lunch				
13:20~14:00	Chair: Tzon-Tzer Lu	Chair: Che-Rung Lee	Chair: Tsung-Min Huang	Chair: Shu-Ming Chang	
	Michael Ng	Tetsuya Sakurai	Bo Yu	Qiang Ye	
14:00~14:40	Weiguo Gao	Feng-Nan Hwang	Wen Li	Linzhang Lu	
14:40~15:00	Tea Break				
15:00~15:40	Chair: Chern-Shuh Wang		Chair: Tiexiang Li	Chair: Wen-Wei Lin	
	Yueh-Cheng Kuo		Yimin Wei	Ren-cang Li	
15:40~16:20	Yusaku Yamamoto		Takafumi Miyata	Zhaojun Bai	
16:20~17:00	Matthew M. Lin				
18:00~	Banquet				

**12/9 - 12/12, 2013**

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**2013 NCTS Workshop on  
Numerical Linear Algebra and  
High Performance Computing  
(2013 NLA-HPC)**

**\* Monday, 9 December 2013**

<b>8:30</b>	<b>Registration</b>
<b>8:50-9:00</b>	<b>Opening</b>
Chair	<b>Zhaojun Bai (University of California, Davis, USA)</b>
9:00-9:50	<b>James Demmel (University of California, Berkeley, USA)</b> Communication Avoiding Algorithms for Linear Algebra and Beyond ( <b>P. 1</b> )
	Tea Break
Chair	<b>Ren-Cang Li (University of Texas at Arlington, USA)</b>
10:10-10:50	<b>Bo Kågström (Umeå University, Sweden)</b> Parallel Multishift QR and QZ Algorithms with Advanced Deflation Strategies -- Review and Recent Progress ( <b>P. 2-3</b> )
10:50-11:30	<b>Yangfeng Su (Fudan University, China)</b> A Backward Stable Algorithm for Quadratic Eigenvalue Problems ( <b>P. 4</b> )
11:30-12:10	<b>Jungong Xue (Fudan University, China)</b> Accurate Computation of M-matrices ( <b>P. 5</b> )
	Lunch
Chair	<b>Tzon-Tzer Lu (National Sun Yat-sen University, Taiwan)</b>
13:20-14:00	<b>Michael Kwok-Po Ng (Hong Kong Baptist University, China)</b> Nonnegative Tensors: Theory and Applications ( <b>P. 6</b> )
14:00-14:40	<b>Weiguo Gao (Fudan University, China)</b> Solving Nonlinear Eigenvalue Problem in Resonant Tunneling Diodes ( <b>P. 7</b> )
	Tea Break
Chair	<b>Chern-Shuh Wang (National Cheng Kung University, Taiwan)</b>
15:00-15:40	<b>Yueh-Cheng Kuo (National University of Kaohsiung, Taiwan)</b> The Matrix Equation $X+AX^T X^{-1}A=Q$ and its Application in Nano Research ( <b>P. 8</b> )
15:40-16:20	<b>Yusaku Yamamoto (The University of Electro-Communications, Japan)</b> Solution of a Large-Scale Nonlinear Eigenvalue Problem Based on the Signed Singular Values ( <b>P. 9</b> )
16:20-17:00	<b>Matthew M. Lin (National Chung Cheng University, Taiwan)</b> On the Finite Rank and Finite Dimensional Representation of Semi-Infinite Hankel Operators ( <b>P. 10</b> )

**\*Tuesday, 10 December 2013**

Chair	<b>Weichung Wang (National Taiwan University, Taiwan)</b>
9:00-9:50	<b>Jack Dongarra (University of Manchester, USA)</b> Algorithmic and Software Challenges when Moving Towards Exascale ( <b>P. 11</b> )
	Tea Break
Chair	<b>Chin-Tien Wu (National Chiao Tung University, Taiwan)</b>
10:10-10:50	<b>Xiao-Chuan Cai (University of Colorado Boulder, USA)</b> A Domain Decomposition Method for Stochastic Parabolic Problems ( <b>P. 12</b> )
10:50-11:30	<b>Sherry X. Li (Lawrence Berkeley National Laboratory, USA)</b> Towards an Optimal-Order Approximate Sparse Factorization Exploiting Data-Sparseness in Separators ( <b>P. 13</b> )
11:30-12:10	<b>Jose E. Roman (Universitat Politcnica de Valencia, Spain)</b> Solving Nonlinear Eigenvalue Problems with SLEPc ( <b>P. 14</b> )
	Lunch
Chair	<b>Che-Rung Lee (National Tsing Hua University, Taiwan)</b>
13:20-14:00	<b>Tetsuya Sakurai (University of Tsukuba, Japan)</b> A Scalable Parallel Eigensolver Using Contour Integral-Based Spectral Projection ( <b>P. 15</b> )
14:00-14:40	<b>Feng-Nan Hwang (National Central University, Taiwan)</b> A Parallel Two-level Polynomial Jacobi-Davidson Algorithm for Large Sparse PDE Eigenvalue Problems ( <b>P. 16</b> )
	Tea Break

**\* Wednesday, 11 December 2013**

Chair	<b>Zhong-Zhi Bai (Chinese Academy of Sciences, China)</b>
9:00-9:50	<b>Iain S Duff (STFC-RAL and CERFACS, UK)</b> Hybrid Methods for Solving Large Sparse Systems (P. 17)
	Tea Break
Chair	<b>Bo Yu (Dalian University of Technology, China)</b>
10:10-10:50	<b>Zhong-Zhi Bai (Chinese Academy of Sciences, China)</b> Block Alternating Splitting Implicit Iteration Methods for Saddle Point Problems from Time-Harmonic Eddy Current Models (P. 18)
10:50-11:30	<b>Ken Hayami (National Institute of Informatics, Japan)</b> Active Set Conjugate Gradient Type Methods for Box Constrained Least Squares Problems (P. 19)
11:30-12:10	<b>Xiao-Qing Jin (University of Macau, China)</b> Optimal Preconditioners for Matrix Functions (P. 20)
	Lunch
Chair	<b>Tsung-Min Huang (National Taiwan Normal University, Taiwan)</b>
13:20-14:00	<b>Bo Yu (Dalian University of Technology, China)</b> Solving the Exponential Interpolation Problem by a Polynomial Homotopy Method (P. 21)
14:00-14:40	<b>Wen Li (South China Normal University, China)</b> On Multi-Stochastic Tensors and its Applications (P. 22)
	Tea Break
Chair	<b>Tiexiang Li (Southeast University, China)</b>
15:00-15:40	<b>Yimin Wei (Fudan University, China)</b> Effective Condition Numbers and Small Sample Statistical Condition Estimation for the Generalized Sylvester Equation (P. 23)
15:40-16:20	<b>Takafumi Miyata (Nagoya University, Japan)</b> Riccati method for PageRank (P. 24)

**\* Thursday, 12 December 2013**

Chair	<b>I-Liang Chern (National Taiwan University, Taiwan)</b>
9:00-9:50	<b>Raymond H. Chan (The Chinese University of Hong Kong, China)</b> A Two-stage Image Segmentation Method using a Convex Variant of the Mumford-Shah Model and Thresholding (P. 25)
	Tea Break
Chair	<b>Raymond H. Chan (The Chinese University of Hong Kong, China)</b>
10:10-10:50	<b>Mila Nikolova (CMLA, CNRS, ENS Cachan, France)</b> The Optimal Solutions of Least Squares Regularized with L0-norm and Penalized by K-Sparsity: Analytical Comparison (P. 26)
10:50-11:30	<b>Delin Chu (NUS, Singapore)</b> New Algorithm for Incremental Linear Discriminant Analysis on Undersampled Problems (P. 27)
11:30-12:10	<b>Luca F. Pavarino (University of Milano, Italy)</b> Scalable Domain Decomposition Solvers for Cardiac Reaction-Diffusion Systems (P. 28)
	Lunch
Chair	<b>Shu-Ming Chang (National Chiao Tung University, Taiwan)</b>
13:20-14:00	<b>Qiang Ye (University of Kentucky, USA)</b> Accurate Computations of Matrix Eigenvalues with Applications to Differential Operators (P. 29)
14:00-14:40	<b>Linzhang Lu (Xiamen University/ Guizhou Normal University, China)</b> A Structure-Exploiting Algorithm for Solving a Palindromic Quadratic Eigenvalue Problem (P. 30)
	Tea Break
Chair	<b>Wen-Wei Lin (National Chiao Tung University, Taiwan)</b>
15:00-15:40	<b>Ren-cang Li (University of Texas at Arlington, USA)</b> The Hyperbolic Quadratic Eigenvalue Problem (P. 31)
15:40-16:20	<b>Zhaojun Bai (University of California, Davis, USA)</b> Solving Algebraic Nonlinear Eigenvalue Problems via Rapid Iterative Diagonalization (P. 32)